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ADVERTISING RATES ON APPLICATION.

EDITORIAL NOTICE

WE invite correspondence and special articles upon subjects of interest to all engaged in the manufacture and sale of Perfumes, Soaps and Toilet Articles. THE AMERICAN PERFUMER is the OPEN FORUM for each and all in the Trade. The usual right to reject objectionable matter and advertisements is reserved.

ANNOUNCEMENT.

THE AMERICAN PERFUMER was founded for the general good. It was intended to subserve the best interests of perfumers, soap-makers, manufacturers of toilet articles, dealers in essential oils, and all directly or indirectly concerned with these industries.

This is the sixth number to be issued and this magazine has already attained international circulation, and a standing among trade papers that may well be envied. The publishers, Messrs. Ungerer & Co., feel that they have accomplished in six months what might under ordinary conditions have required years to bring about, but there is still more to be done. The trade requires the broadest kind of an organ to protect the interests of all and to raise the general standard. No limitations of persons or interests must be permitted, even seemingly, to hamper the advancement of this organ, and, therefore, valuable as the magazine has become, it is to be turned over as a whole to THE PERFUMER PUBLISHING COMPANY, with the sole purpose of extending the influence and power of the magazine still further.

The present publishers wish to thank their many friends for the hearty support given to them, and to bespeak for the new owners a continuation of the kindly treatment given to them.

Our readers may be sure that the high standard set heretofore will be preserved, and that all will be treated with equal fairness.

FROM THE OTHER SIDE.

There are at least two sides to every question, just as there are two sides to a coin. The wise man needs to consider the different aspects of each question presented, lest he become narrow and err in his judgments.

We are therefore pleased to present the views of an importer of perfumery for the consideration of all our readers, at home and abroad, that they may see how the French perfumer or his American agent regards the entire matter. It is not for us to say in how far Mr. Prindle is right, or to lay any special emphasis on special points in his arraignment of American perfumers as imitators and copyists.

If he be correct, the American Manufacturer is not going about it in a very intelligent way to establish American goods when he puts French labels on his extracts and borrows packages and styles from Paris. Of course it was in Paris that modern perfumery received its greatest development, but with our boasted American push, energy and originality we ought to be able to begin where the Parisian leaves off and go far ahead of him in this art.

It certainly does not help us, and is a confession of weakness, when we are content to copy labels and goods from successful French manufacturers.

We have able chemists here in the United States. We have artists of no mean ability, who can certainly design labels that will attract the eye of the purchaser. We have lithographers who can make

these labels for us. We have the right to go to the centres of production of raw materials and buy the best that are to be had. Nay, the agents of the leading foreign houses are seeking the patronage of American perfumers. There is no reason whatever that we cannot make perfumery equal to the best in the world if we will devote our energies to the task and not be too hasty about it. Time is required to manufacture anything of real value. "Art is long" and perfumery is an art.

The importer gives us the best advice in the world—advice that applies to other departments than the manufacture of perfumery: "Be yourselves, and work out your own salvation in your own way, and that will be at least worthy."

We may be willing to learn all that the rest of the world has to teach us, but we will imitate no one, not even the best, for the imitation is never any more than a counterfeit, and we must be above counterfeits.

PURITY AND THE PERFUMER.

Purity is a necessary element in perfume of high quality. And there are many conscientious Manufacturing Perfumers who appreciate this fact, seeking the purest possible raw materials. Unfortunately they are not always able to distinguish the pure from the adulterated, and analysis will not clear the way in all instances.

If a perfumer has bought adulterated or low grade oil of a certain kind to begin with, he is sure to look for similar oil afterwards, and the pure material is so strange to his nose that he puts it aside as faulty, when it is he himself that is at fault. Numerous instances might be cited to prove these facts, for these are authentic accounts of what has occurred.

A sample of Otto of Rose of special selection and unquestioned purity was submitted to a certain perfumer, who had been accustomed to use Otto of a really inferior sort. He made what seemed to him an honest test of the material, but his nose was always seeking the odor to which he was accustomed, and as a result he could not be satisfied with this exceptionally fine oil. The error was psychological, although he did not know where the error lay, and did not recognize it as error.

On another occasion a perfumer was shipped pure Oil Neroli "by mistake." The material sent him previously had been compounded with Oil Petit Grain. He refused the pure oil and asked to have the "genuine" to which he had been accustomed. In no other product perhaps have the perfumers been more deceived than in Oil Neroli, many refusing to believe that the pure oil was submitted when they had the unadulterated material in their hands. (With the great increase in the price of this product this year we may expect adulterations of Oil Neroli to be worse than ever, because many perfumers will refuse to pay from ninety to a hundred dollars a pound, and that is what the pure oil will cost.)

The result of all this counterfeiting and adulterating is fatal to the quality of American perfumes, which the manufacturers are trying so hard to establish on a firm foundation. If the pure materials are furnished the formulæ give adequate and proper rich results, but if impure materials are used once the danger is that the manufacturer will continue to use them, because he is *accustomed* to such results.

We know of instances where even pomades made with flowers alone and to full natural saturation were rejected because the purchasers were accustomed to reinforced or blended products. A certain firm asked a maker of pomades to send them the best possible Violet Pomade, no matter what the price. With such an order it is certain that the producer of raw materials furnished the best possible Violet Pomade. But it did not suit the purchaser. He did not know it, because his pomade education was all wrong.

If we could begin all over again we would avoid many errors, and there is a way for the Manufacturing Perfumer to begin all clean and pure. Let him see that his formula is based upon absolutely pure materials, and then he will be bound down to no firm or person, but only to the right goods, which he can and will demand of every purveyor to his needs.

THE STORY OF VANILLIN.

The real story of Vanillin is printed in these columns, as it can be found in no book, magazine or pamphlet. The very clear, consecutive and enlightening article by Mr. E. C. Spurge, appearing on another page of this issue of THE AMERICAN PERFUMER, will be studied the world over, because it is the first really authoritative article on the subject, written without prejudice, giving credit to all

of the investigators who have worked so faithfully to perfect the process of the manufacture of this important product.

Mr. Spurge has robbed his succinct and informing article of all technicalities so that the layman may read it with pleasure and profit. We are pleased to be the medium through which this information is given to the great mass of the people who understand so little about Vanillin, fond as they are of the Vanilla flavor. It is an article to be read with pleasure, because it adds to the store of human knowledge in an important field.

PURE FOOD AND PERFUMES.

The pure food laws of some of the States are being applied to perfumes with considerable strictness, and if the Federal law is applied so broadly it is well for the manufacturers to be on their guard.

The official report from the Government Agricultural Station of North Dakota, dated June, 1906, is before us. There we note a special section devoted to the discussion of "Florida Waters." According to the Dakota law the term "drug" includes not only medicines but also disinfectants and "cosmetics," which is interpreted to cover toilet waters. The examination of Florida waters showed that one sample contained methyl alcohol, which is absolutely prohibited by the Dakota law. The others contained ethyl alcohol, from 57% to 92.23%, and as according to the law of this State any mixture containing more than 5% of alcohol must bear a label stating the precise amount of alcohol, these Florida waters must be so labelled or they cannot be legally sold in that State. The manufacturers will have to alter their labels to do business in Dakota, and it is a question whether it will pay to go to the trouble and expense. This is the kind of "wild legislation" at which we hinted last month. This hurts business and certainly it can do no harm for a Florida water to contain ethyl alcohol even to 95%. If any one wishes to buy his drinks perfumed whose business is it?

In the same report we find a section dealing with "Hair Tonics and Preparations," in some of which methyl alcohol is found, and in the others in which ethyl alcohol is found without label so stating on the bottle. At least one manufacturer "declines to ship any more goods to North Dakota." Why methyl alcohol should be barred from hair tonics and toilet waters is explicable only upon the ground that the Indians are apt to drink anything that smells like "fire-water."

But this would not militate against compounds containing ethyl alcohol, which is certainly no worse than some of the whiskey sold to "Poor Lo."

Here is a shining instance of the methods adopted by some of the wild Western States to cramp industry by stupid and unnecessary regulations. Perhaps in the light of the National law some of these States will return to reason, not only as to the use of alcohol, but also as to the use of harmless aniline colors against which they have run "a mad muck."

A little sanity now and then is expected even from State legislators, though we may be frequently disappointed in our expectations.

EARLY CHEMISTRY.

Long before chemistry became a science many of its processes and apparatus were in common use. Prof. H. Carrington Bolton has made a list of some of these, finding that the Egyptians were acquainted with the process of glass-making at least as far back as 2,500 B. C., that crucibles of the fifteenth century B. C. are now in the Berlin museum, and that syphons also were used in the fifteenth century B. C. Blowpipes and bellows were early employed. The earliest chemical laboratories now known were those of the Egyptian temples, in which the priests prepared the incense, oils, etc., used in the temple services. The Bible contains frequent chemical allusions. Cupellation is plainly described by Jeremiah, metallurgical operations by Job, Ezekiel, and others, and bellows by Jeremiah. Geber, the Arabian physician of the eighth century, wrote minutely of chemical processes. He described solution, filtration, crystallization, fusion, sublimation, distillation, cupellation, and various kinds of furnaces and apparatus. Perhaps the earliest drawings of strictly chemical apparatus are the figures of distilling apparatus in a Greek papyrus of the eleventh century. An alchemist's laboratory of the sixth or seventh century was uncovered in Egypt in 1885, and its contents included a bronze furnace, about fifty bronze vases with beaks, and some conical vessels resembling sand-baths. The balance as an instrument of precision reached a high development under the Arabians as early as the twelfth century, when very accurate specific gravity determinations were described.

LEADING AMERICAN PERFUMERS.

D. R. Bradley & Son, New York.

The house of D. R. Bradley & Son may be counted among one of the younger establishments in this trade, but just because it was founded no longer ago than 1877 it is interesting to note the progress that has been made.

The senior member of the firm began the manufacture of perfumery in a very small way less than thirty years ago, in a little place on Laight street. Thence, as the growth of the business demanded it, removals took place to Grand street, to Thirtieth street, and finally to No. 473 West Forty-third street, quarters now too small for the flourishing development.

Beginning with one or two specialties, the name Bradley now appears on a complete line of extracts, toilet waters, sachets, soaps and whatever else is expected of the general perfumer.

Moving along conservatively at first, this house has gained many friends for some of its distinctive products, especially for the full line of Woodland Violet applied to extract, toilet water, sachet, talc, face powder, cold cream, and even to sea salt. This is the leader of all the line, being good value for a fair price. The extract sells at retail for fifty cents an ounce, and the other products in proportion.

The secret of the progress of the business is attributed by its members to two leading principles. The members of the firm themselves have every detail of the business constantly under supervision. The laboratory especially has been watched with eagle-eye. The other definite line of progress has been the improvement of the quality of the goods up to the limit of a fair profit.

The firm has held that the best advertisement of their products was the goods themselves, and they have put what would otherwise have gone into advertising space into extracts and toilet waters.

There has been a steady effort to feel the pulse of the public and adapt their goods to the taste of the purchasers. It has been found, for instance, that a large majority of the people want violet products—and they have had violet in all shapes, forms and variations, so that half of the goods sold each year by Bradley's is of violet stamp.

A practical and original idea of this firm was the scenting of sea salt for the bath, and this has proved one of their most popular lines.

One of the latest odors to be developed is "Morning Dew," a bouquet of considerable sweetness, which is proving very popular, with its symbolic label of more than usual appropriateness.

The general line of various odors suited to different tastes is manufactured; special attention has been devoted to the compounding of talcum powders, and with considerable success. The latest attractive package is the invention of the junior member of the firm, being not only "catchy" in appearance, but very practical as well.

The business had been developed by D. R. Bradley for twenty years, practically alone, but in 1897 he called his son, William A. Bradley, to his aid, after having given him a thorough theoretical training in the Chemical-Biological School of the New York University. After two years the son was admitted to the firm, which has since been known as D. R. Bradley & Son.

From its inception the firm has been closely identified with the Manufacturing Perfumers' Association, William A. Bradley being the present treasurer of the association as well as the chairman of the Committee on Trade Interests. As the head of this important committee a report was presented by him at the last meeting of the association which will go far towards remedying more than one existing evil. In this report the chairman was especially emphatic in denouncing the evil of putting French labels on American goods.

The highest priced extract made by Bradley's is the Coronation Violet, but their other standard brands, Woodland Violet, Stem Violet, Vesta Carnation and Morning Dew enjoy a large sale, especially in the Middle West, which this firm has found to be most appreciative of their goods.

NURSERY RHYMES REVISED.

Sing a song of acids,
Bucket full of dye;
Four and twenty bob veal
Soaked in alkali;
When the mess is cooking
Shake the borax can;
Isn't that a dainty dish
To set before a man?

Little drops of refuse,
Little grains of dope,
Make the boneless chicken,
And the scented soap. —*Ex.*

VANILLIN.

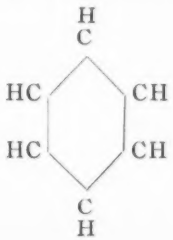
SOME ACCOUNT OF ITS MANUFACTURE.

By E. C. Spurge, B. Sc., F. I. C. Chemist, Ozone-Vanillin Co., Niagara Falls, N. Y.

The flavoring principle of the vanilla bean attracted the attention of chemists many years ago. The aromatic principle was isolated from the beans at an early period, but the development of organic chemistry at that time was insufficient for its chemical constitution to be established and several of the early investigators held quite erroneous views as to its nature. The French chemist Gobley in 1858 first gave it the name of Vanillin, but he did not succeed in establishing its chemical nature. To the German chemists Tiemann and Haarmann belongs the honor of determining the exact constitution of vanillin as the result of a long series of experiments.

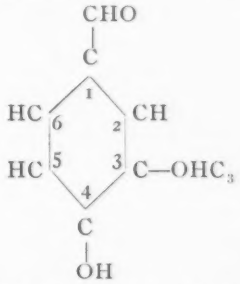
In the investigation of a compound by modern scientific methods the first step is to find out the composition, then the structure of the compound under examination. By composition is meant the number of atoms of carbon, hydrogen, oxygen, etc., contained in the molecule, and by structure the relative manner in which the atoms or groups of atoms are arranged with regard to each other. The composition of a body is determined by analyses, its structure by resolving it into simpler forms—atoms or groups are split off until the compound has been resolved into some well-known compound which serves as the basis or skeleton. This having been done, to confirm the work the skeleton or basic compound is taken and by addition of similar atoms or groups to those split off an attempt is made to reproduce the natural compound. If successful, the artificially built-up compound will possess the same chemical and physical characters as the principle isolated from the natural source. When this has been done, the composition and structure of the compound may be considered firmly established.

The researches of Tiemann proved that the skeleton or framework of vanillin was benzene.

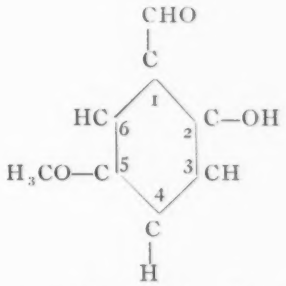


The structural formula of benzene is given above. This formula is an artificial device in order to assist the mind in following the course of reactions, and it certainly serves to explain things admirably. It will be seen that benzene consists of six pairs of carbon and hydrogen atoms linked together by the carbon atoms in ring fashion. Any one of the six hydrogen atoms can be exchanged for another atom or atomic group, but the carbons cannot be exchanged without breaking up the ring.

Considering now Vanillin—the work of Tiemann proved its structure could be represented by the following formula:



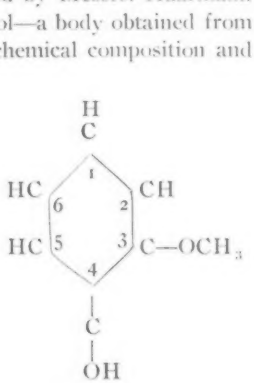
The group CHO is termed an aldehyde group, OCH_3 a methoxy group and OH a hydroxyl group. Vanillin therefore is derived from benzene by the exchange of three of its hydrogen atoms for the three groups shown above. The three groups must be arranged as shown; if they are not, the compound will not be vanillin. Thus the formula below:



although possessing exactly the same atomic groups, represents not Vanillin, but another compound liquid at ordinary temperature. In order, therefore, to accurately describe the structure of a compound, the device of numbering the carbon

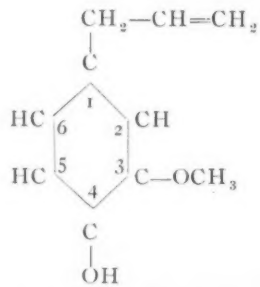
atoms has been adopted, and in describing a compound the numbers are prefixed to the names of the groups. Thus Vanillin becomes in chemical parlance—3 methoxy 4 hydroxy benzaldehyde. It may be asked, Why not build up vanillin from benzene by adding the required groups? The answer to this is, the expense and difficulty of introducing the groups in the required position is too great for such procedure to be a commercial success.

In the laboratory, in order to arrive at the structure of a body, methods are employed which would be quite impracticable on the large scale. Once, however, the structure has been established the problem before the technical chemist becomes that of finding some body which will furnish a means of obtaining the wished-for compound at a moderate price. In 1874 Messrs. Tiemann & Haarmann discovered that coniferin when oxidized yielded vanillin. Coniferin is a complex crystalline body obtained from the inner bark of pine trees. The first vanillin prepared from this source was placed on the market about 1876 and cost $1,500 per kilo. Its introduction gave a great impetus to the synthetic perfume industry. It may be interesting to remark here that, in a comparatively recent work by L. Lecomte, the author considers the vanillin in the vanilla bean to be produced from coniferin, existing in the green beans, by the fermentation process to which they are subjected and during which the vanilla odor and flavor is developed. Vanillin was also prepared by Messrs. Haarmann and Reimer from guaiacol—a body obtained from beech tar and having the chemical composition and structure shown below:



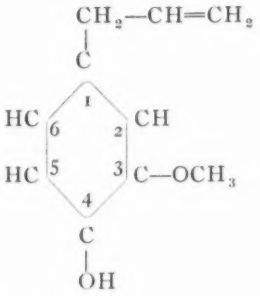
4 hydroxy 3 methoxy benzene.

By comparing with the formula for vanillin it will be seen that guaiacol lacks only the group CHO. This group can be introduced by treatment with chloroform and caustic soda in watery solution, but the yield of vanillin obtained is very small. Traube, in 1896, found that the yield could be considerably increased by using alcohol instead of water as a solvent, but by that time other processes had been devised, and so his improvement appears to have been little used. Extended work by Messrs. Tiemann & Haarmann showed that the body coniferyl alcohol which could be split off from the more complex coniferin was the source of the vanillin obtained from it. Further it was discovered that coniferyl alcohol possessed a structure very similar to that of eugenol. Now eugenol occurs in oil of cloves to the extent of 83-90%, and if it could be converted into vanillin a comparatively cheap and readily accessible source of raw material would be at hand. This was first done by Erlenmeyer in 1876 by oxidation with potassium permanganate in alkaline solution—the yield, however, was very poor. Eugenol possesses the structural formula shown below:

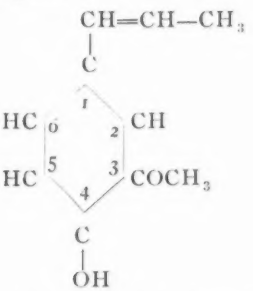


The group CH — CH = CH is known as the allyl group and by transformation of this into the group CHO vanillin results. The allyl group unfortunately is not the most sensitive part of the molecule, and in submitting eugenol to oxidation the more sensitive hydroxyl (OH) group is attacked with the formation of many resinous by-products. To protect this sensitive group, M. de Laire, in 1876, conceived the ingenious idea of adding an atomic group to it, effecting the oxidation, and subsequently removing the added group. The group added thus merely acts as a protection during the oxidation. This certainly was a great advance, but the aceto group, which he added whilst rendering the hydroxyl group more stable, did not render the allyl group more sensitive to attack. A very great improvement was effected when Messrs. Haarmann and Reimer and de Laire in 1890 patented the preparation of iso eugenol. According to their patent eugenol is heated for some hours with an excess of caustic potash dissolved in amyl alcohol. At the end of a given period the mixture is allowed to cool and acidified

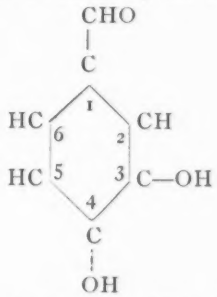
in order to liberate the product of the reaction. The result of this treatment is to shift the position of the double linkages in the allyl group of the eugenol, bringing them nearer to the benzene nucleus. The allyl group has been converted into a propenyl group and eugenol



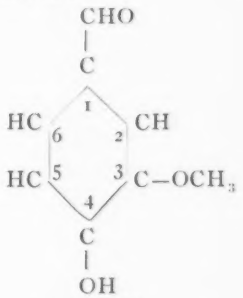
has become iso eugenol



This transformation is extremely favorable to the oxidation, as it produces a weak point in the molecule, just where it is wanted. Nevertheless the hydroxyl group must still be protected if good results are to be obtained and accordingly Messrs. Haarmann & Reimer and de Laire obtained patents for the addition of various protective groups. In practice the aceto group is added, both on account of its cheapness and the comparative ease with which it can be introduced and eliminated—and acetiso eugenol is the body used largely in the preparation of vanillin at the present time. The oxidation of the acet iso eugenol is effected by permanganate of potash and the conditions of oxidation have been the subject of long and patient study, until at the present time the yield obtained is fairly favorable. After the development of the process of Messrs. Haarmann and Reimer & de Laire vanillin began to assume a more important commercial aspect, and during the years 1894-1897 numerous patents were taken out for its production. Some of these patents involved the use of other raw materials than clove oil, and these chiefly made use of protocatechuic aldehyde or some derivative of it. Now protocatechuic aldehyde is very closely related to vanillin—as shown by the formulæ below:



Protocatechuic aldehyde.



Vanillin.

It will be seen that by conversation of the OH group occupying the position 3 into the OCH_3 group vanillin will be formed. This transformation is, however, not easy to effect, as both hydroxyl groups are more or less transformed, and the result is a mixture, not pure vanillin. By special precautions the yield of vanillin can be increased, but the expense of these, together with the cost of the protocatechuic aldehyde, have up to the present prevented these processes from competing with those using clove oil. Among processes using clove oil may be mentioned that of Pum, who proposed to oxidize eugenol by means of mercuric oxide in alkaline solution, Messrs. Haarmann and Reimer's process for the oxidation of iso eugenol by peroxides in alkaline solution, and Boeringer's process for the oxidation of the benzylether of iso eugenol by potassium bichromate. All these processes seem to have been little used, no doubt, owing to their being unable to produce the vanillin cheaply enough. In 1895 Messrs. Otto and Verley obtained a patent for the oxidation of iso eugenol by means of ozone. The appearance of this process excited much attention, and a good deal of incredulity was expressed as to the possibility of performing the oxidation with ozone. The difficulties attending the development of the process were certainly great, it being the first application of ozone to organic chemistry, and an enormous amount of labor and expense was involved in adapting a suitable ozone plant to the work. This was, however, accomplished, and the course of the oxidation thoroughly studied. The process in its most improved form is now being worked by the Ozone-Vanillin Company, of Niagara Falls.

Ozone is a gas possessing a powerful odor resembling that of phosphorus matches and is con-

densable to a blue liquid by intense cold. It is formed from the oxygen of the air by the action of the blue electric discharge. Ozone is intensely active, decomposing almost instantaneously into ordinary oxygen in contact with organic matter, hence only the purest of air can contain ozone, since the impurities present in the average atmosphere would instantly cause its decomposition. Its chemical formula is O_3, whilst that of ordinary oxygen is O_2, and it may be considered as a more active form of oxygen. In performing the oxidation of iso eugenol by ozone the ozonized air is conducted as rapidly as possible into the iso eugenol, where the ozone performs its oxidizing action and the deozonized air escapes. By using ozone in the oxidation of iso eugenol there is no necessity to protect the hydroxyl group as in other processes, since the ozone has a peculiarly selective action and does not rapidly attack the hydroxyl group. This circumstance makes the ozone process the most direct of all processes, whilst ozone is the cleanest and most agreeable oxidizing agent known. The crude vanillin obtained by all the processes is more or less brown, and to purify it repeated crystallizations are made from water. The crystals appear on the market in brilliant white needles, which, if pure, melt sharply at 80-81° C. One part of vanillin dissolves in 100 parts of water at ordinary temperatures and in 20 parts at 90° C. It dissolves freely in alcohol and ether, as well as in most other organic solvents. Among the advantages gained by the use of vanillin are purity, uniformity, concentration, convenience, absence of coloring matter and cheapness, one ounce of vanillin being equivalent in flavoring power to about three pounds of vanilla beans. Since the vanillin produced from clove oil is absolutely identical in composition with the vanillin isolated from the beans themselves it is difficult to see how any reasonable objection can be raised to its use. Despite the large quantity of vanillin now produced the sale of vanilla beans does not suffer any decline, and it is to be assumed that the introduction of vanillin has greatly increased the use of this popular flavor, and has enabled the confectioner and candy manufacturer to use it in goods where the beans would prove unsatisfactory or too expensive. By the introduction of vanillin, therefore, the public has been afforded more appetizing confections, and at the same time a natural industry has not been affected.

In conclusion a few remarks concerning the price of vanillin may be of interest. In 1876 it was $700 a pound, but since that time it has suffered a continuous decline, until to-day its price is about $5 a pound. The above figures show in a marked manner the effect of improved processes and increased demand on the price of a commodity. The present price of vanillin, however, is abnormally low in consequence of severe competition, and cannot be considered as profitable to the manufacturer.

OBITUARY.

In the death of Hermann T. Fritzsche the Essential Oil trade loses one of its important members. He was the head of the well-known firm, Schimmel & Co., Miltitz (Leipzig), Germany, and of Fritzsche Brothers, of New York. As the successor of his father he had done much to advance, not merely his business, but the welfare of his workmen as well, so that his untimely taking off at the age of sixty-three is deeply mourned, not merely by his family, but by a large circle of friends, for every employee was a friend. Those who knew him became attached to him, for he was possessed of many sterling qualities, and as thoroughly as he developed his business, he did not do so at the sacrifice of the virtues which endear men to their associates.

He received special distinction on account of his endeavors to improve the condition of the laborers and insure their comfort in old age, being appointed Privy Commercial Councillor to the King of Saxony.

The surviving business associates of Hermann Fritzsche are Ernest T. Fritzsche, and his sons, Karl A. and John P., and Karl Brucker. His wise counsels will be especially missed by these gentlemen, who have the sympathy of all their friends.

The Pharmacists' Manufacturing Company, of New York, is in trouble. Following a suit of Frank M. Prindle & Co., the representatives of Maison Violet, a receiver has been appointed for the Pharmacists.'

The Solon Palmer Company, of New York, has been incorporated with a capital of $50,000. The incorporators named are E. Palmer, L. D. Kerney, E. H. Holland, L. A. Ames and S. G. Metcalf.

WHY IMPORT PERFUMERY?

By F. M. Prindle, Frank M. Prindle & Co., U. S. Agents for the Maison Violet, Paris, France.

[Mr. Prindle is an American and would himself like to see American Manufacturers of Perfumery the most successful in the world, just as he would like to see them lead in every other department. But he is of the opinion that they are as little apt to make the finest perfumery as they are to make the finest champagne. His article speaks for itself.—Ed.]

Yes, we still find a large demand for imported perfumery, and there is a reason. The simplest explanation is that the French perfumers know their business, for they have originated modern perfumery and the secrets of its successful manufacture are theirs, and are apt to remain theirs. The leading French manufacturers of perfumes look upon their business, not merely as a money making pursuit, but a certain sacredness has attached to this art, and the traditions of methods and formulæ have been handed down from father to son for generations. They are kept absolutely secret, and no one penetrates the holy of holies of the perfumer's laboratory. Either the eldest son, or a member of the firm at least, holds the "gospel of formulæ," and his assistants never know what is being used or in what proportions. More than this; it must not be forgotten that the making of perfumery is an art as well as a science, and the personal element of the perfumer cannot be eliminated. With the same materials and the same formulæ different men obtain very different results. When it is noted that in addition to the secret formulæ, the leading Parisian houses buy especially fine materials, paying the highest prices for the best, and the perfumers are themselves artists, to whom their profession is a kind of second religion, it is not surprising that they obtain perfumes of surpassingly fine quality. They are never in a hurry, sometimes working years in perfecting one perfume before putting it on the market.

It is not strange, then, that those customers who seek the finest perfumes are compelled to buy those imported from Paris. Why, your principal American manufacturers, who claim that they are trying to build up American perfumery, are going about it in a very strange way. They imitate our bottles, our boxes, our labels, and try to imitate the perfumes, calling them by similar names, and putting on the labels of Soaps and Extracts "Made in France."

Is not this a confession of inferiority? Of course the American perfumer may plead that he does this because the people want to be humbugged, but this is hardly legitimate business. We hardly get out a new cake of soap before one of your large manufacturers copies it as exactly as he can in appearance, shape, box, etc., tries in vain to copy the perfume, and sells it at a lower price than our product, as he well can.

It is not a question of price with the fastidious users of perfumes. They want something delicate, distinctive and fine. The French houses give them what they want, and that is the reason that the imports of perfumes are growing year by year.

Imitation, they say, is the sincerest form of flattery, and if this be true the French perfumers should feel intensely flattered, for they are being imitated from one end of the United States to the other. A perfume salesman for a domestic manufacturer to sell his wares by the argument that they are nearly equal to the imported, never that they are better, rarely makes the claim of equality, but they are always cheaper and afford a better profit. I do not think that this is the way to establish the trade in American perfumes, but that is the business of the American manufacturers. I understand that at the last meeting of these gentlemen they raised the question of "French labels" and they were unanimous against the use of these false flags, but I have not noticed any diminution in their use, as a result of the agitation.

The Paris perfumer will always find a good market in the United States, so long as he is true to his art and sends here the best that he can produce. They are not in such a hurry out there to turn out goods, ready or unready. They ripen their tinctures, refusing to use them until they are at least three years old; they buy the finest essential oils they can get, from the finest Oil of Rose to absolutely pure oils of all kinds. They are not afraid to spend money, talent and experience in making the finest products that art and science combined can produce. They have established the highest standards, and will continue to uphold them.

The American prides himself upon his independence. Let him strike out for himself and make really good perfumes and perfumed soaps, and he will find a constant sale for them. But he will never develop and hold the American market so long as leading perfumers are content to copy French products from the exterior, and imitate the contents of the bottles all too basely.

SOME RECENT CHEMICAL DISCOVERIES IN THE EUCALYPTS.

By Henry G. Smith, F. C. S., Assistant Curator, Technological Museum, Sydney, Australia.

[Read at the British Pharmaceutical Conference held at Birmingham, England, July 23 to 26.]

Perhaps no genus of plants is so rich in distinct chemical constituents as is that important section of Australian trees, the eucalypts, and in no group is the determination of these constituents more helpful in the botanical arrangement and classification of the several species. The knowledge obtained by chemical investigation aids considerably in determination of doubtful species, and often fixes as distinctive characters which might be considered as of little consequence morphologically. The knowledge thus gained is also of considerable economic value, as each well-defined species appears to give always the same chemical constituents whatever the conditions of growth. In association with his colleague (Mr. R. T. Baker, the Curator) the author has done much phytochemical work on the eucalypts, and they were able by the results to point out the correlation between the venation of the leaves of the several species and the chemical constituents of the plant. This applies to the oil obtainable from the leaves and to the kinos or astringent exudations. The differences observed are not accidental, but the outcome of a well-defined process of evolution, and so constant have the characters been found to be that it was possible to suggest, from the study of the botanical characters of a tree growing nearly 3,000 miles away, what the chemical constituents of the plant would be, and subsequent investigation completely supported that original suggestion.

Kinos or Astringent Exudations.—One aspect of this question particularly interesting to pharmacists is that by running down the genus species are found exuding kinos, which do not gelatinize in tinctures. The best product, chemically, is that from *E. microcorys*, but it cannot be obtained in commercial quantities. The next best is that of *E. calophylla*, and this species exudes kino in large quantities, and it can be supplied in ton lots if required. The product of *E. rostrata* is not so good, as it gelatinizes eventually, and is not nearly so astringent. The explanation of gelatinization is that there are two (if not three) well-defined tannins in these kinos. One of these gelatinizes in tinctures more readily, perhaps, than does any other other tannin. This is characteristic of the kinos of those eucalypts known as the "stringybarks," the "peppermints," and a few others, and it also occurs as a tannin glucoside in the kinos of the "iron-barks" and allied species. This tannin is colored violet by ferric chloride. The glucoside was long supposed to be gum, but gum does not occur in the eucalypts. The other tannin does not gelatinize in tinctures; this is colored green by ferric chloride; but it is difficult to find it occurring sufficiently free from the other tannin to form a non-gelatinizable kino, and in only a few species does it occur in this condition. The evolutionary process of the genus is marked in another direction by the kinos. In some of the early members the crystallizable body found in the kinos is aromadendrin alone, but soon another crystallized body introduces itself; this is eudesmin, and although eudesmin continues to increase as the genus descends, until it is found in considerable amount in some species known as "boxes," yet the other body, aromadendrin, is always present. A remarkable circumstance connected with these bodies is that the color reactions given with concentrated nitric or sulphuric acid are quite opposite—a yellow color is given by nitric acid with one body and red with the other, and just the opposite with sulphuric acid, so that it is possible to determine the absence of either aromadendrin or eudesmin the one from the other.

Oxalic Acid.—It seems possible that oxalic acid may be obtained very cheaply as a by-product from the barks of certain species of eucalypts where it occurs as calcium oxalate, as much as 16 per cent. being present in some species. It probably could not be profitably extracted from species containing no other commercial constituent, but in the bark of *E. salubris* a considerable amount of a tannin is present which has excellent tanning qualities. This could readily be extracted, to form a tannin extract, and from the residue the calcium oxalate could be extracted by dilute hydrochloric acid, precipitated by ammonia, and the impurities removed (if necessary) by acetic acid. A comparatively pure product is thus obtainable, from which oxalic acid could be prepared by the usual methods. The presence of oxalate probably accounts for the origin of the "mallees" or shrubby forms of the eucalypts, this being due to the poisoning effect of a continually increasing amount of oxalic acid in the plant. This mallee form is perhaps a stage in

the ultimate extinction of the species. Again, it is only those species which have peculiar chemical and botanical characters that appear to form "mallees"; the "peppermints" and the "stringy-barks" do not seem to take on the "mallee" form of growth, and these trees are allied to the largest eucalypts on the Continent.

Oils.—The author suggested that by an improved method of first distillation, and by collecting the more volatile products alone, considerably improved medicinal oils are obtainable, much richer in eucalyptol and almost free from the higher boiling and more objectionable bodies. The recent discovery of limonene (60 per cent.) in the oil of *E. Stageriana*, together with citral (16 per cent.) and a geraniol (12 per cent.), makes this oil of possible use as a flavoring-agent, or in other directions; and the discovery of geraniol in large amount in the oil of *E. Macarthuri* (60 and often 73 per cent. of ester) makes this species of some importance as a source of geranyl-acetate, if not of geraniol itself. Citronellal has long been known as the principal constituent of *E. citriodora* oil, but a new aldehyde, aromadendral, has recently been isolated from several eucalyptus oils. It was originally thought to be cumin aldehyde. It is a common constituent in the oils of the "boxes" and allied species, and causes these oils to be lævorotatory, the terpene phellandrene not occurring in the oils of this group. The constituent which gives the odor of peppermint to many of these oils has been isolated, as has also the constituent which is the source of the amyl alcohol found in eucalyptus oils.

THE FREE ALCOHOL BILL.

The following is the text of the act of Congress, providing for free denatured alcohol:

An Act for the withdrawal from bond, tax free, of domestic alcohol when rendered unfit for beverage or liquid medicinal uses by mixture with suitable denaturing materials.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That from and after January first, nineteen hundred and seven, domestic alcohol of such degree of proof as may be prescribed by the Commissioner of Internal Revenue, and approved by the Secretary of the Treasury, may be withdrawn from bond without the payment of internal revenue tax, for use in the arts and industries, and for fuel, light, and power, provided said alcohol shall have been mixed in the presence and under the direction of an authorized Government officer, after withdrawal from the distillery warehouse, with methyl alcohol or other denaturing material or materials, or admixture of the same, suitable to the use for which the alcohol is withdrawn, but which destroys its character as a beverage, and renders it unfit for liquid medicinal purposes; such denaturing to be done upon the application of any registered distillery in denaturing bonded warehouses specially designated or set apart for denaturing purposes only, and under conditions prescribed by the Commissioner of Internal Revenue.

The character and quantity of the said denaturing material and the conditions upon which said alcohol may be withdrawn free of tax shall be prescribed by the Commissioner of Internal Revenue, who shall, with the approval of the Secretary of the Treasury, make all necessary regulations for carrying into effect the provisions of this Act.

Distillers, manufacturers, dealers and all other persons furnishing, handling or using alcohol withdrawn from bond, under the provisions of this Act, shall keep such books and records, execute such bonds and render such returns as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may by regulation require. Such books and records shall be open at all times to the inspection of any internal revenue officer or agent.

Sec. 2. That any person who withdraws alcohol free of tax under the provisions of this Act and regulations made in pursuance thereof, and who removes or conceals same, or is concerned in removing, depositing or concealing same for the purpose of preventing the same from being denatured under governmental supervision, and any person who uses alcohol withdrawn from bond under the provisions of section one of this Act for manufacturing any beverage or liquid medicinal preparation, or knowingly sells any beverage or liquid medicinal preparation made in whole or in part from such alcohol, or knowingly violates any of the provisions of this Act, or who shall recover or attempt to recover by redistillation or by any other process or means, any alcohol rendered unfit for beverage or liquid medicinal purposes under the provisions of this Act, or who knowingly uses, sells, conceals, or otherwise disposes of alcohol so recovered or redistilled, shall on conviction of each offense be fined not more than five thousand dollars, or be

imprisoned not more than five years, or both, and shall, in addition forfeit to the United States all personal property used in connection with his business, together with the buildings and lots or parcels of ground constituting the premises on which said unlawful acts are performed or permitted to be performed: Provided, That manufacturers employing processes in which alcohol, used free of tax, under the provisions of this Act, is expressed or evaporated from the articles manufactured, shall be permitted to recover such alcohol and to have such alcohol restored to a condition suitable solely for reuse in manufacturing processes under such regulations as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall prescribe.

SEC. 3. That for the employment of such additional force of chemists, internal revenue agents, inspectors, deputy collectors, clerks, laborers, and other assistants as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may deem proper and necessary to the prompt and efficient operation and enforcement of this law, and for the purchase of locks, seals, weighing beams, gauging instruments, and for all necessary expenses incident to the proper execution of this law, the sum of two hundred and fifty thousand dollars, or so much thereof as may be required, is hereby appropriated out of any money in the Treasury not otherwise appropriated, said appropriation to be immediately available.

For a period of two years from and after the passage of this Act the force authorized by this section of this Act shall be appointed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, and without compliance with the conditions prescribed by the Act entitled "An Act to regulate and improve the civil service," approved January sixteenth, eighteen hundred and eighty-three, and amendments thereof, and with such compensation as the Commissioner of Internal Revenue may fix, with the approval of the Secretary of the Treasury.

SEC. 4. That the Secretary of the Treasury shall make full report to Congress at its next session of all appointments made under the provisions of this Act, and the compensation paid thereunder, and of all regulations prescribed under the provisions hereof, and shall further report what, if any, additional legislation is necessary, in his opinion, to fully safeguard the revenue and to secure a proper enforcement of this Act.

OTTO OF ROSE.

BY ERNEST J. PARRY.

The recent meeting, at Phillipopolis, of merchants and exporters of otto of rose, at which it was urged that Government control of the distilleries should be enforced, must undoubtedly be interpreted as a recognition by the high-class distillers and exporters of the disreputable state to which a certain section of the trade has brought this industry. When, a few years ago, it was decided to attach a Government seal to the vessels of otto of rose leaving Bulgaria, the honest distillers pointed out that this would do nothing more than prove to demonstration where the sophistication had taken place, but the less honest dealers considered it a good move, no doubt because they knew well that many of the smaller users would regard the Government seal as a guarantee of purity, and would not take the trouble to read the statement (which is in French) that the contents were guaranteed to be Bulgarian produce.

I have personally had the opportunity of examining a very large number of samples of otto of rose during the past six months, and I am compelled to say that I have never known adulteration of this article so bad as it is at present—that is, since the time when the article has been regularly submitted to chemical analysis.

It appears to be certain that if the otto of rose is distilled *in vacuo*, in a quite different fashion from that usually followed, the resulting otto has characters quite different from those of ordinary otto; but one of the principal features of this abnormally pure otto is the presence of a large amount of phenyl-ethyl alcohol, so that it can be easily recognized. Directly this fact became known, the unscrupulous dealers began describing their otto, mixed with a liberal amount of geraniol and other bodies, as "distilled by a special process," etc., and made vigorous attempts to get adulterated otto accepted as in reality merely abnormal but pure otto.

From the experience of many years' crops, and from samples taken from all over the rose-gathering areas, I am convinced that a pure otto of rose never (that is, when distilled in normal Bulgarian fashion) has a specific gravity over about 0.855. It usually falls between the limits 0.850 and 0.853 at 30° C., and anything over this is at once suspicious. I have selected fifteen samples of the worst description which I have examined during the past two or three months, which will demonstrate the adul-

teration that is going on at present. All these samples were offered as pure otto of rose:

Sp. gr. at 30°.	Melting Point.	Optical Rotation.	Refractive Index.
0.880	20°	—2° 50′	1.4750
0.877	21°	—3°	1.4700
0.870	20°	—2° 40′	1.4680
0.870	20°	—2° 30′	1.4675
0.869	21°	—2°	1.4701
0.866	21°	—2° 40′	1.4690
0.865	22°	—1° 50′	1.4672
0.866	21°	—2°	1.4650
0.871	20°	—2° 35′	1.4680
0.870	20°	—2° 40′	1.4670
0.862	21°	—3° 20′	1.4675
0.863	21°	—1° 10′	1 4668
0.866	22°	—2°	1.4689
0.868	21°	—2° 30′	1.4690
0 862	21°	—1° 50′	1.4672

It is clear that at present otto of rose requires careful watching, and those with these high specific gravities, but not containing phenyl-ethyl alcohol, should be rejected.—*C. and D.*

THE MUSK DEER.

A recent French official report furnishes some interesting particulars with regard to the exact habitat of the musk deer and the trade routes by which the valuable drug is brought into commerce. According to this authority, the musk known in the European markets as "Tonquin" would be more correctly described as "Yunnan" musk, since its geographical origin is not the French territory of Tonquin, but the province of Yunnan, in the extreme south of the Chinese Empire. Yunnan is about equal in size to England, and has a soil of exceeding richness, abounding in coal and possessing valuable deposits of silver and copper. At present, owing to the comparative inaccessibility of the province, these riches are lying almost undisturbed; but the time can not be far off when the country must be thrown open to Western enterprise, and when its borders shall be crossed by the railway lines which are already steadily approaching, with Yunnan and the adjoining provinces as their objective, from French Tonquin in the southeast and British Burmah in the southwest. Yunnan is one of the weak buffers still interposed between the British and French dominions in that part of Asia. When it finally succumbs to the commercial spirit of the West, there is every prospect that the center of the musk trade may be shifted from Shanghai to Calcutta, Rangoon, or Hanoi, or that these three centres may divide the business between them. As with musk, so it may be with many other products of southern China—a country so exceptionally rich that the question of commercial supremacy in its markets ought to be studied with the closest attention by our traders. At present, however, the musk of Yunnan is nearly all brought by a long and difficult overland route to Shanghai, the commercial center of the drug. As the crow flies, Shanghai is 1,400 miles distant from the western parts of Yunnan, where the best musk is collected; Hanoi, in French Tonquin, is only about 400 miles off, and is easily accessible by the Red River route, while to Rangoon there are about 750 miles to travel, in a straight line; and to Calcutta 1,000 miles.

According to the report to which we have referred, Yunnan musk has been brought into commerce by the present trade route ever since the commencement of the sixteenth century, the chief places of collection in Yunnan being known as Ta-li, Yao-chow, and Mien-ning—all in the western part of the province. That portion of Yunnan is exceedingly mountainous, and in it the musk deer are still found in comparatively large numbers, in spite of the energetic manner in which the creatures are pursued by the musk-hunters. A few years ago persistent reports were circulated in our markets that the Chinese Government had strictly enjoined a prolonged close season for the musk deer, and musk prices advanced partially upon the strength of those rumors; but it is doubtful whether such an order, even if it were issued, could have been effectively enforced. Yunnan, we may here observe, is one of the principal Chinese opium-growing provinces, and, according to European travelers who have traversed these parts, vast fields of poppy are cultivated everywhere, in spite of the stringent regulations issued by the central government altogether forbidding the cultivation of the drug in China. If, then, opium-growing is suffered with impunity, it is not likely that any regulations would seriously avail against the hunting of the musk deer. Besides Yunnan, the provinces of Sse-chuan and Kwei-chow also produce musk; but the product of these two provinces is said to be of a very inferior quality, and the Chinese themselves, who consume musk for many more purposes than the Europeans, will have none of it. According to Mr. Hosie, whose work on western China we noticed a few months ago, the musk deer is rather plentiful in Sse-chuan; and other writers also assign to the animal a rather more extensive habitat than does the French writer. The only other musk

besides that of Yunnan, says the latter, used by the Chinese themselves, is musk from Thibet, as cabardine musk. Two distinct varieties of cabardine musk are known in trade, viz., the so-called China cabardine, and the Russian cabardine, which reaches us by way of Siberia. It is probably to the former and more valuable variety that the writer refers, as the Russian cabardine musk is collected much farther north. The quantity of musk which the deer (known to the Chinese by the name of Tshan-Tse) furnishes varies according to its age and the season when the musk is obtained. With somewhat superfluous simplicity, it is stated that "the operation of cutting off the musk-pouch is fatal to the animal;" and it is also affirmed that there is an idea that if the deer is killed before the operation the musk is lost. How this can be is not explained, though it would be interesting to know how the musk deer is induced to allow itself to be caught alive to submit to the operation. In the Chinese musk-hunt illustrations, moreover, which are found inclosed as advertisements in the Shanghai musk caddies, the animals are often represented as being killed by arrows shot from a distance, and this is evidence towards the supposition that the pods are not taken from live animals. The best musk is yielded by well-fed deer from five to six years old, and it should only be taken in the spring or summer, as at other seasons it is not in good condition. From the three trade centers in Yunnan which we have enumerated the musk pods are brought to Yunnan-fu, the capital of the province, where they are bought up by merchants from the province of Biang-si, who make a specialty of this article, and carry it to Shanghai and Canton, the two principal markets. Shanghai is by far the most important center, and the musk is brought thither by way of Chung-King and Ichang, on the Yang-tse River. Canton receives its modest quota by way of Pai-sse. In Yunnan already three grades of musk are distinguished in the market, the first (Ki-tan-ko) having locally ranged from 58s. to 62s. per ounce in value last year; the second (Pan-tsi-kwan-yu) from 52s. to 55s. 6d. per ounce; while the third consists of adulterated pods (Mao-ko) which have no fixed market value. In Shanghai there are three native houses who share the bulk of the musk trade between them, and who are believed to command a capital of about £25,000 each. Musk is liable to several small local duties on its way from Yunnan to Shanghai. In the first place, there is an entrance duty, amounting to about 2d. per ounce, at the boundary of each prefecture or administrative district through which the musk is carried; but on these duties drawback is allowed if the musk is exported. Next there is the li-kin duty of 10d. per ounce, which must be paid when the musk reaches Shanghai or Canton; and finally there is an export duty of about 2½d. per ounce levied by the Chinese maritime customs. Last year the value of musk exported from Shanghai to other Chinese ports was estimated at £12,000 and that of musk shipped from Shanghai to foreign countries at £56,400. From Canton £265 worth of musk was exported to Chinese ports, and £776 worth abroad. But Pekin, the Chinese capital, receives, in addition to this, about 600 caddies of musk every year for pharmaceutical purposes, the article being held in high repute among the Chinese as an antispasmodic, a cholera specific, and a remedy against sores and ulcers.

NORTH DAKOTA DECISIONS.

[From the Official Report, North Dakota Experiment Station.]

HAIR TONICS AND PREPARATIONS.

A number of hair tonics, dandruff cures and similar preparations have been examined; first, to determine whether they contain methyl alcohol; second, to determine if they contain prohibited constituents or those requiring to be labelled; and, third, to see if the strength, quality and purity falls below the professed standard under which it is sold. A product which contains methyl alcohol cannot be sold in this State. For the clause covering this point reads as follows:

"It shall be unlawful to sell, offer or expose for sale, or have in possession, any preparation or product, intended for the use of man either for internal or external purposes, which contains methyl alcohol or 'wood spirits.'"

Among the products examined are the following:

No. 73. Coke's Dandruff Cure.

Manufactured by A. R. Bremer Co., New York.

Total alcohol ..... 35 per cent.
Methyl alcohol .....21.25 per cent.

This product is, therefore, illegal in this state so long as it is produced so as to contain methyl spirits.

No. 74. Eucalyptus Hair Tonic.

Eucalyptus Hair Tonic Co., Minneapolis, Minn.

This product contains no prohibited constituents. It is an aqueous solution containing as its active ingredient, borax, sodium carbonate, sodium chloride, and is apparently colored with cochineal.

No. 75. Danderine.
Knowlton Danderine Co., Chicago.

Ethyl alcohol by volume.....10.5

The product also contains borates. It would need to be labelled for the per cent. of alcohol, but under date of January 5, 1906, the company write: "Replying to yours of the first will say that under the ruling which you have made we must decline to ship any more goods to North Dakota." The product must, therefore, be regarded as illegal.

No. 76. Hall's Sicillian Hair Renewer.
R. P. Hall & Co., Nashua, New Hampshire.

This product is an aqueous solution containing lead acetate, lac sulphur, glycerine and a little oil. It is not, therefore, as claimed a vegetable product.

No. 77. Ayer's Hair Vigor.
J. C. Ayer & Co., Lowell, Mass.

This product was found to be an aqueous solution of lead acetate, lac sulphur, bitter almonds and glycerine and contains no prohibited constituents.

No. 92. Monique Hair Tonic.
Ed. Monique, Paris.

This product contains ethyl alcohol 71 per cent. It contains a considerable quantity of borax and is colored with aniline dyes. It requires labelling for the per cent. of alcohol.

No. 93. Eau de Quinine.
Norwood Chemical Co., New York.

This product contains ethyl alcohol 71 per cent. It contains considerable quantity of borax. The product should be labelled for the per cent. of alcohol.

No. 96. Newbro's Herpicide.
Herpicide Co., Detroit, Mich.

This product contains 44 per cent. of ethyl alcohol. The company have labelled the same to comply with the law, although there is still to be found occasionally samples shipped into the state of Herpicide which contains methyl alcohol and, therefore, the sale would be illegal in North Dakota and the party purchasing should see that the product intended for this state is secured.

No. 195. Egyptian Hair Tonic and Dandruff Cure.
R. H. Hegener, Minneapolis, Minn.

Total alcohol .....54 per cent.

The product also contains certain volatile oils, making it difficult to determine the actual per cent. of alcohol in the form of methyl, but it is nearly, if not all, in the form of wood spirits or methyl alcohol. The sale of the product in this state is, therefore, illegal.

FLORIDA WATERS.

A number of Florida waters have been examined to determine the per cent. of alcohol, for it is maintained that this product comes under the definition of a drug which the law defines as follows:

"The term 'drug' as used in this act shall include all medicines for internal or external use, antiseptics, disinfectants and cosmetics."

These examinations are tabulated with the per cent. of alcohol as follows:

No. 38. Colgate & Co., New York.
Ethyl alcohol .....92.33 per cent.

No. 39. Solon Palmer Co., New York.
Ethyl alcohol .....91.71 per cent.

No. 40. Richard Hudnut, New York.
Ethyl alcohol .....91.02 per cent.

No. 41. Andrew Jergens & Co., Cincinnati, Ohio.
Ethyl alcohol .....90.52 per cent.

No. 42. Lightner Perfume Co., Detroit Mich.
Ethyl alcohol .....78.50 per cent.

No. 63. Lazell, Dalley & Co., New York.
Ethyl alcohol .....79.45 per cent.

This Florida water formerly contained methyl alcohol, but for North Dakota at least the product is now furnished as produced from Ethyl alcohol.

No. 91. Murray & Lanman, New York.
Ethyl alcohol 60.5

No. 94. E. N. Lightner & Co., Detroit, Mich.
Ethyl alcohol .....57.00 per cent.

In order to be legal in this state each of the above Florida waters should be labelled to show the per cent. of alcohol and those which were found to contain methyl alcohol would be illegal in this state and parties handling the same are liable to prosecution.

FOREIGN CORRESPONDENCE.

LAVENDER, JASMIN, STRIKES, OTTO OF ROSES, CARAWAY-SEED, KANANGA, MESSINA OILS.

[The news appearing under this heading from month to month is the latest possible authentic reports from the various floral culture centers or markets. Just because these are reports taken on the spot, reflecting actual conditions which are constantly changing, apparent contradictions are due to altered conditions, and must be so considered.—ED.]

CANNES (A. M.) FRANCE.—The distillation of Oil of Lavender is progressing, and it is now certain that the crop will be below the average, on account of the very dry season. The lower grade lavender, weak in ester, will be scarce. The better grade of lavenders will be proportionately more abundant, but less than the average at that. In the mountainous regions the crop of Aspic is reported as fair. Although distillation has commenced, it is not yet certain how good the yield of oil will be, so the price is not yet fixed. It will probably begin at last year's figure. The cutters of lavender, moved by the high price offered, began cutting too soon, without waiting for the second growth. Besides trying to cut too short they are pulling up the plants by the roots, which augurs ill for the 1907 crop. It is also notable that the lavender district is becoming more restricted year by year on account of the forestry extension.

We have just commenced to gather Jasmin, for, as is the case with most of the crops, this one is very late, and the amount brought to the factories so far is insignificant. The prospects are for an excellent crop, unless the intense heat spoils it, or it is attacked by worms. Although prospects are for a large crop the prices of last year will be maintained. The price spoken of now is 4 or 4.25 francs, which would be most remunerative to the growers.

GRASSE, FRANCE.—There has been quite a strike in the factory of Lautier Fils, but it is a pleasure to report that all the workmen have returned to their places. Many of the laborers claimed that others prevented their returning to work, and the police were asked to protect them. All except five returned to work at one time, and later the announcement was made of broad concessions to them: 1. No one is to suffer for striking. 2. That the *service des chassis* (*cullcurage* work) shall continue to be done by men, as heretofore. 3. That after the Jasmin season a proportionate premium shall be awarded, in accordance with the labor done. 4. Overtime shall be paid for at the rate of 20 centimes per hour. 5. That no ill-feeling remain salaries are paid even for time of striking. Every one was satisfied, and even the five slow ones took their places before noon. Thus the difficulties are completely adjusted, and all is peace.

KAZANLIK, BULGARIA.—With the completion of the Otto of Rose distillation has arisen the very important question of quality and adulteration. During the first week in July a conference took place between the producers of otto and the merchants who handle it. The chief question discussed was how to obtain a perfectly pure and unadulterated otto. It was agreed that government inspection promised the only absolute guarantee, and that if exported under the stamp "Controlled Otto of Roses" purchasers would know that they were getting the pure article. It seems that one of the pregnant causes of adulteration is the prevailing low price of otto, and the high price of wood. It was suggested at the meeting that plantations bearing white roses should be ordered destroyed. That in each village a steam-distillation plant should be established, and the government inspectors could then control the work perfectly. It was objected to this latter plan that the small producers would not abandon their stills, which actually produce a finer quality otto than the raw product coming from the large steam plants. Amid the conflicting reports it is difficult to tell precisely what will be done. While not announced, the price of the crop is practically agreed to, and will begin on last year's basis. It will, however, probably advance a little later. Whether anything will come of the efforts to obtain "Controlled Otto" remains to be seen.

AMSTERDAM, HOLLAND.—The official report on the crop of Caraway-Seed is just about to appear. According to it the area under cultivation is 4,513 hectares as compared with 4,295 in 1905 and 5,361 in 1904. The present price is 15 florins, the crop being estimated at from 70,000 to 80,000 bales. This is about half the size of the crop in 1904 and even less than that of 1905. The prospects of a good crop in the province of Groningen are very fair. The plants are in flourishing condition, but have largely gone to straw instead of seed. In Zeeland and North-Brabant prospects are tolerable. In North Holland, however, where the culture of Caraway-Seed is most important, a much smaller area than last year is under cultivation. Mice and the dry summer of last year have injured the crop

here materially. In South Holland the prospects are less than fair.

BATAVIA, JAVA.—The distillation of Kananga has fallen off very greatly of late; in fact a number of distillers have stopped it altogether. This is due to the very low price which Oil of Kananga has commanded. It is unfortunate that, just as many began to use this valuable product on account of its cheapness, the very cheapness stops the distillation, and the price must go higher.

MESSINA, ITALY.—It is the same story here, with an emphasis. The "Combination" is keeping the prices up on all the oils from Lemon to Bergamot, and in view of the fact that it will be several months before any of the new crop will be available there is no relief in sight.

Even the new crop is being discounted by an increase of prices therefor. The fact is that the "Combination" happened to strike it right, with a short supply on hand, and as a result there seems to be no limit to the asking price. Some factors are asking $1.05 for new crop Oil of Lemon, and proportionate prices for Orange and Bergamot Oils. The general feeling is that these prices have risen permanently, and the old 55c. Lemon is a dream of the distant past, never more to appear. Time alone

ANCIENT DYESTUFFS.

Some interesting analyses of ancient dyestuffs have been made by Mr. Edward Schunck, of Manchester, England. The specimens were taken from a coffin found in a tomb at Garob, lower Egypt, supposed to date from 400-500 A. D. They were used apparently for filling the mummy cases, and not, strictly speaking, as grave clothes. Two principal colors were found: blue, which proved to be a true indigo, and red, which was found to have been produced from madder, and corresponded almost exactly to the Turkey red of the present day. Other colors were produced by the mixture of these shades, and a purple fabric was made by spinning together a mixture of blue and red fabrics, previously dyed separately. These analyses are the first we have ever known to be made, and show that our principal vegetable dyestuffs have been known and used since the most ancient times. Although our modern aniline and other coal tar dyes are far more brilliant and diversified in color than those used by the Egyptians, they are very evanescent, and even under the favorable conditions of an Egyptian climate would entirely fade away and disappear in a very small fraction of 1,500 years.

ON THE SCENT.

BY MR. S. SENCE.

Mr. D. M. MacLean has been in New York lately seeing his old friends, to whom he is always a welcome visitor.

Mr. A. Vilbois, the well-known representative of J. Mannheimer, has returned from Europe, and is out after business.

Mr. H. H. Wagner, of the E. Armant Company, Binghamton, N. Y., was in the city lately, in the interest of that house.

Mr. George F. Stevens has become perfumer for the Allan-Pfeiffer Chemical Company, of St. Louis, a splendid field for his talents.

The Liberty Soap Co., of Chicago, has gone into into the hands of a receiver. How much the creditors will get has not yet been announced.

Mr. E. V. Killeen has returned from a very pleasant trip abroad, and is now ready to see any number of buyers in the interest of George Lueders & Co.

Mr. W. G. Ungerer is sailing for Europe at the close of the month, on *La Savoie*. He is not going out for pleasure, but will visit France, Switzerland, Germany and England.

The removal of Messrs. Kurka & Holinsky, representing Louis Planchon & Co., of Marseilles, France, and Oranje, of Amsterdam, Holland, is announced. They are now located at No. 80 Pine street.

The Oxadine Company has been incorporated at Westfield, N. J., capital $100,000, to manufacture pharmaceutical preparations and toilet articles. Incorporators: T. R. Harvey, F. B. Gilpin and J. T. Smith.

Mr. Harry W. Heister, son of Mr. Henry J. Heister, the genial representative of Messrs. George Lueders & Co., was married lately to Miss Jessie A. Wharton, of Brooklyn. The Essentials of happiness should Oil their way through life.

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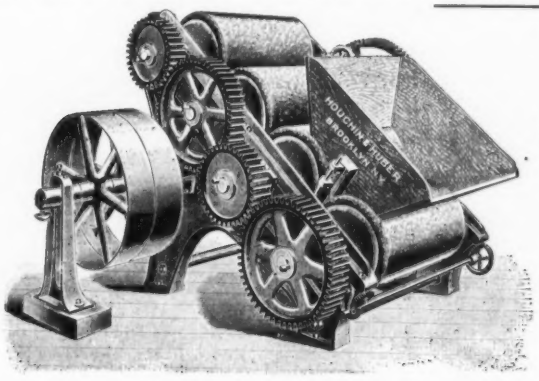

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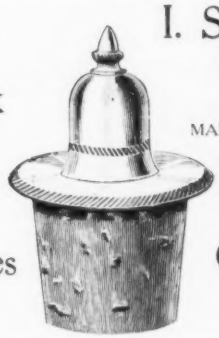

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